

A NEW HOST ASSOCIATION FOR THE STILT BUG *JALYSUS SPINOSUS* (HETEROPTERA: BERYTIDAE)¹

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ABSTRACT: The closely related North American stilt bugs *Jalysus spinosus* and *J. wickhami* have dissimilar host ranges, with the former associated with panic grasses and the latter with "glandular-hairy" dicots in several families, including the Onagraceae (*Epilobium*, *Gaura*, and *Oenothera* spp). Recent collecting in Arkansas, Maryland, Pennsylvania, Virginia, and West Virginia has shown that *J. spinosus* also develops on an onagraceous host, enchanter's nightshade, *Circaea quadrisulcata*. The published record of *J. wickhami* from this plant in Missouri should be referred to *J. spinosus*.

Wheeler and Henry (1981) clarified host ranges of the berytids *Jalysus spinosus* (Say) and *J. wickhami* Van Duzee, noting that the latter has been misidentified in nearly all papers treating its biology. The stilt bug reported as a pest of tomato fruit and released in tobacco fields to help control aphids and lepidopteran pests was determined to be *J. wickhami*, a species preferring flowers and fruits of "glandular-hairy" plants in diverse families, especially Malvaceae, Onagraceae, Oxalidaceae, Scrophulariaceae, and Solanaceae. In contrast, *J. spinosus* was shown to feed on spikelets of various panic grasses; in a review of berytid host plants, Wheeler and Schaefer (1982) speculated that this stilt bug might be restricted to grasses of the genus *Panicum*.

Although this characterization of hosts is, for the most part, true, recent collecting indicates that *J. spinosus* also develops on an onagraceous plant, enchanter's nightshade, *Circaea quadrisulcata* (Maxim.) Franch. & Sav. The Rev. James M. Sullivan collected nymphs and adults on enchanter's nightshade in Crawford Co., Arkansas (s.e. of Winslow) in late July 1983. Because the plant colony was near a *Panicum* sp. that had dropped its fruit, it was thought that the bugs were merely "getting by" on an adventitious host. But during August 1985 I took *J. spinosus* on fruits of enchanter's nightshade in Maryland (Carroll Co. w. of Taneytown and Frederick Co., n. of Thurmont), Pennsylvania (Adams Co., w. of Hunterstown; Cumberland Co., s. of Mount Holly Springs; Dauphin Co., Rockville; Franklin Co., w. of Blue Ridge Summit; Lancaster Co., Conestoga and s. of Marietta; Lebanon Co., Mount Gretna; Philadelphia Co., Morris Arboretum;

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Schuylkill Co., Muir; and York Co., Stewartstown and e. of York), Virginia (Rockingham Co., n. of Mauzy and Shenandoah Co., Edinburg), and West Virginia (Hampshire Co., e. of Slanesville and Morgan Co., e. of Berkeley Springs). Nymphs and adults were collected at all localities except Conestoga, Pennsylvania (nymphs only), and near Mauzy, Virginia (adults only). Voucher material from the localities cited has been deposited in the insect collection of the Pennsylvania Department of Agriculture, Harrisburg.

In Europe another metacanthine berytid, *Metatropis rufescens* (Herrich-Schaeffer), occurs on *Circaea lutetiana* L. (see Wheeler and Schaefer 1982). The occurrence of *J. spinosus* on the related *C. quadrisulcata* in Arkansas, Maryland, Pennsylvania, Virginia, and West Virginia suggests that this onagraceous plant serves as a common host over much of this berytid's range [U.S. and southern Canada east of 100th meridian (Wheeler and Henry 1981)] and that its use is not a localized population phenomenon (see Fox and Morrow 1981). Both *Circaea* and *Panicum* serve as late-season hosts; *J. spinosus* has been taken on panic grasses in Pennsylvania and West Virginia during August (Wheeler and Henry 1981) and during the present survey.

Wheeler and Henry (1981) listed enchanter's nightshade as a host of *J. wickhami* in Missouri. Because this stilt bug develops on other onagraceous plants — *Epilobium*, *Gaura*, and *Oenothera* spp. — they assumed that this was the *Jalysus* species that the Rev. J.M. Sullivan had observed on *Circaea quadrisulcata*. He recently has found *Jalysus* occurring "with regularity" on this plant in Missouri (Rev. J.M. Sullivan, *in litt.*) Even though voucher material is not available, the record from *C. quadrisulcata* (Wheeler and Henry 1981) and subsequent collections from this plant in Missouri almost certainly pertain to *J. spinosus*.

Jalysus wickhami thus is associated mainly with viscid-pubescent dicots of roadsides, fields, and waste places, whereas *J. spinosus* occurs mainly on monocots, i.e., *Panicum* spp., growing in similar habitats. The latter berytid also develops on enchanter's nightshade, a plant of rich woods and thickets and a member of the Onagraceae, which contains several common hosts of *J. wickhami*. Perhaps a likely evolutionary course leading to observed host associations in these closely related stilt bugs will become apparent once phylogenetic relationships in *Jalysus* are reconstructed and hosts of other species in the genus are discovered.

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LITERATURE CITED

- Fox, L.R. and P.A. Morrow. 1981. Specialization: Species property or local phenomenon? Science 211: 887-893.
- Wheeler, A.G., Jr. and T.J. Henry. 1981. *Jalysus spinosus* and *J. wickhami*: Taxonomic clarification, review of host plants and distribution, and keys to adults and 5th instars. Ann. Entomol. Soc. Am. 74: 606-615.
- Wheeler, A.G., Jr. and C.W. Schaefer. 1982. Review of stilt bug (Hemiptera: Berytidae) host plants. Ann. Entomol. Soc. Am. 75: 498-506.
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SOCIETY MEETING OF NOVEMBER 20, 1985

The second regular meeting of the 1985-86 year was held at the Academy of Natural Sciences of Philadelphia. Fifteen members and four guests attended. The featured speaker was Dr. Douglas M. Kolodny-Hirsch of the Maryland Department of Agriculture. He spoke on "The Maryland Gypsy Moth Integrated Pest Management Pilot Project."

Despite the fact that the gypsy moth, *Lymantria dispar*, has been a serious forest pest in the northeastern U.S. for almost a century, most of the effort to control it could be considered in the realm of crisis management. The philosophy of the Maryland Gypsy Moth I.P.M. Project is different. The idea is to develop preventive management strategies which will keep populations below economically damaging and annoying levels. A large region of Maryland between Baltimore and Washington, D.C. has been selected as a project area. A survey and monitoring system has been established on a one kilometer grid for regularly recording quantitative and qualitative observations of gypsy moths and natural enemy populations along with other variables indicating change in the forest environment. Since the project began in 1983, a number of management tactics have been assessed on local populations within the study area. These tactics have included the application of pheromones, release of parasitic Hymenoptera, release of irradiated eggs producing sterile adults, spraying with *Bacillus thuringiensis*, and spraying with chemical insecticides. The large amounts of data from these studies are being processed in such a way that populations can be evaluated both temporally and geographically with respect to the type of treatment. Although the final evaluations will be made at the end of the five year project, preliminary results indicate that several management strategies are promising but may need further refinement.

In reports of local entomological interest Kenneth Frank reported that after eight years a pipevine, *Aristolochia durior*, planted in his yard in center city Philadelphia has attracted a pipevine swallowtail, *Battus philenor*. He displayed a photograph of a clutch of eggs that were laid. Unfortunately the first instar larvae were captured by a spider. Although this species has been reported from Philadelphia, it is quite rare. Hal White displayed a handkerchief from Japan that was beautifully decorated with Odonata and Neuroptera. A short discussion followed in which the reverence for insects by Eastern societies was contrasted with the general dislike of insects by Western societies.

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